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EXAMINER	
YUEN, KAN	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/722,423	MACISAAC, GARY LORNE	
	Examiner	Art Unit	
	Kan Yuen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-75* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-75* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/4/2007*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments, see page remark, filed 8/31/2007, with respect to the rejection(s) of claim(s) 1-75 under 102 and 103 rejections have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Cranford Jr. et al. (Pub No.: 2004/0066864), and Chen et al. (Pub No.: 2004/0017779).

Claim Rejections - 35 USC § 103

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 11, 12, 15-22, 28, 31-44, 49-51, 54-61, 67, 70-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over An (Pub No.: 2001/0040919), in view of Cranford Jr. et al. (Pub No.: 2004/0066864).

For claims 1, and 37-40, An disclosed the method of receiving a first traffic waveform representing a time distribution of data volume in a first direction in the data communication system in a first period of time; producing a correlation value representing a correlation of the first traffic waveform with a reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in the reference, the unit 121 detects a data rate of the transmitted bit stream data by counting up or down whenever bit stream data in a word unit is transmitted from unit 102 to unit 104 (first direction). The sampler 122 samples a value detected by unit 121 at 125Hz. The LPF 123 filters the value sampled by the sampler 122. As shown in fig. 2A and fig. 2B illustrating the result of input and output of the simulation of a LPF. Fig. 2A-2B, illustrates the result of the sampled value in waveform, where the waveform is filtered with LPF. The X-axis of fig. 2A-2B can represent the frequency or time, where the Y-axis can represent the data volume or gain. The unit 124 detects an error based on the sampler value and filtered value. The unit 125 compares the error transmitted by unit 124 with a reference error level; producing a bandwidth anomaly signal when the correlation value satisfies a criterion (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, paragraph 0027, lines 1-20). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126. The output unit 126 outputs the estimated data rate to the outside. As a result, an initial bandwidth is allocated to a

device based on the estimated data rate. However, An did not disclose the method of using reference waveform. Cranford Jr. et al. from the same or similar fields of endeavor teaches the method of using reference patterns (waveform) and sampled patterns to produce a sample condition signal; (Cranford et al. see paragraph 0005, lines 1-15). The edge detecting system received a serial data stream. The sampler collects pattern from the stream, and a correlator for producing a sample signal based on the sampled patterns (waveform) and reference patterns. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Cranford Jr. et al. in the network of An. The motivation for using the method as taught by Cranford Jr. et al. in the network of An, being that it can increase the system production accuracy.

Regarding claim 40, An disclosed the method of a processor circuit (An see paragraph 0020, lines 1-13) the transmission rate detector 120 is the processor circuit; configured to: receive a first traffic waveform representing a time distribution of data volume in a first direction in the data communication system in a first period of time; produce a correlation value representing a correlation of the first traffic waveform with a reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in the reference, the unit 121 detects a data rate of the transmitted bit stream data by counting up or down whenever bit stream data in a word unit is transmitted from unit 102 to unit 104 (first direction). The sampler 122 samples a value detected by unit 121 at 125Hz. The LPF 123 filters

the value sampled by the sampler 122. As shown in fig. 2A and fig. 2B illustrating the result of input and output of the simulation of a LPF. Fig. 2A-2B, illustrates the result of the sampled value in waveform, where the waveform is filtered with LPF. The X-axis of fig. 2A-2B can represent the frequency or time, where the Y-axis can represent the data volume or gain. The unit 124 detects an error based on the sampler value and filtered value. The unit 125 compares the error transmitted by unit 124 with a reference error level; and produce a bandwidth anomaly signal when the correlation value satisfies a criterion (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, paragraph 0027, lines 1-20). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126. The output unit 126 outputs the estimated data rate to the outside. As a result, an initial bandwidth is allocated to a device based on the estimated data rate. However, An did not disclose the method of using reference waveform. Cranford Jr. et al. from the same or similar fields of endeavor teaches the method of using reference patterns (waveform) and sampled patterns to produce a sample condition signal; (Cranford et al. see paragraph 0005, lines 1-15). The edge detecting system received a serial data stream. The sampler collects pattern from the stream, and a correlator for producing a sample signal based on the sampled patterns (waveform) and reference patterns. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Cranford Jr. et al. in the network of An. The motivation for

using the method as taught by Cranford Jr. et al. being that it can increase the system production accuracy.

Regarding claim 2, An disclosed the method of producing the bandwidth anomaly signal comprises producing the denial of service attack signal when the correlation value is less than a reference value (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). The unit 126 outputs the estimated data transmission rate signal to the outside. As the result, an initial bandwidth is allocated to a device based on the estimated data rate signal. The comparison result signal can be interpreted as the DDOS signal.

Regarding claim 3, An disclosed the method of producing the bandwidth anomaly signal comprises determining whether the correlation value is less than the reference value (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126.

Regarding claim 4, An disclosed the method of receiving a second traffic waveform representing a time distribution of data volume in a second direction on the data communication system in a second period of time, and using the second traffic waveform as the reference waveform to produce the correlation value (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in the reference, the unit 121 detects a data rate of the transmitted bit

stream data by counting up or down whenever bit stream data in a word unit is transmitted from unit 104 to unit 102, which in reserve direction (second direction). The unit 125 compares the error transmitted by unit 124 with a reference error level.

Regarding claim 5, An disclosed the method of generating the first traffic waveform in response to a first set of traffic measurement values (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). The sampler 122 samples a value detected by unit 121 at 125Hz. The LPF 123 filters the value sampled by the sampler 122. As shown in fig. 2A and fig. 2B illustrating the result of input and output of the simulation of a LPF. Fig. 2A-2B, illustrates the result of the sampled value in waveform (first waveform).

Regarding claim 11, An disclosed the method of the first traffic waveform represents a statistical measure of a time distribution of data volume in the first direction (An see fig. 1, unit 120, see fig. 2a, 2b, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20).

Regarding claim 12, An disclosed the method of monitoring data in the first direction and producing the first set of traffic measurement values in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding claim 15, An disclosed the method of monitoring the data in the first direction comprises at least one of: counting packets and counting octets, in the first direction (An see paragraph 0021, lines 1-10). The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 16, An disclosed the method of causing a processor circuit operable to produce the first traffic waveform to communicate with at least one of a packet counter and an octet counter to receive values representing the first set of traffic measurement values (An see paragraph 0020, lines 1-13, paragraph 0021, lines 1-10). The transmission rate detector 120 is the processor circuit. The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 17, An disclosed the method of causing the processor circuit to implement at least one of the packet counter and the octet counter (An see paragraph 0021, lines 1-10). The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 18, An disclosed the method of passively monitoring the data in the first direction (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding claim 19, An disclosed the method of signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8,

paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding claim 20, An disclosed the method of controlling at least one of transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

Regarding claim 21, An disclosed the method of generating the first and second traffic waveforms in response to first and second sets of traffic measurement values, representing traffic in the first and second directions on the data communication system, respectively (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in the reference, the unit 121 detects a data rate of the transmitted bit stream data by counting up or down whenever bit stream data in a word unit is transmitted from unit 102 to unit 104 (first direction). The sampler 122 samples a value detected by unit 121 at 125Hz. The LPF 123 filters the value sampled by the sampler 122. As shown in fig. 2A and fig. 2B illustrating the result of input and output of the simulation of a LPF. Fig. 2A-2B, illustrates the result of the sampled value in waveform, where the waveform is filtered with LPF. The X-axis of fig. 2A-2B can represent the frequency or time, where the Y-axis can represent the data volume or gain. The unit 124 detects an error based on the sampler value and filtered value. The

unit 125 compares the error transmitted by unit 124 with a reference error level. The unit 104 also can transmit stream data to unit 102 (second direction) to produce second waveform with same procedure mentioned above.

Regarding claim 22, An disclosed the method of receiving first and second waveforms representing first and second statistical measures of first and second time distributions respectively of data volume in first and second directions in the data communications system (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in fig. 2A and fig. 2B illustrating the result of input and output of the simulation of a LPF. Fig. 2A-2B, illustrates the result of the sampled value in waveform, where the waveform is filtered with LPF. The X-axis of fig. 2A-2B can represent the frequency or time, where the Y-axis can represent the data volume or gain.

Regarding claim 28, An disclosed the method of monitoring data in the first and second directions and producing the first and second sets of traffic measurement values respectively in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As discussed before, the detecting unit 121 detects data rate by counting or monitoring up or down whenever bit stream data is transmitted from unit 102 to unit 104, or unit 104 to unit 102 in reverse direction (second direction).

Regarding claim 31, An disclosed the method of monitoring the data comprises at least one of: packet counters and octet counters in each of the first and second

directions (An see paragraph 0021, lines 1-10). The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 32, An disclosed the method of causing a processor circuit operable to produce the first and second traffic waveforms to communicate with at least one of a packet counter and an octet counter to receive values representing the first and second sets of traffic measurement values (An see paragraph 0021, lines 1-10). The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 33, An disclosed the method of causing the processor circuit to implement at least one of the packet counter and the octet counter (An see paragraph 0021, lines 1-10).

Regarding claim 34, An disclosed the method of passively monitoring the data in the first and second directions (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As discussed before, the detecting unit 121 detects data rate by counting or monitoring up or down whenever bit stream data is transmitted from unit 102 to unit 104, or unit 104 to unit 102 in reverse direction (second direction).

Regarding claim 35, An disclosed the method of signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding claim 36, An disclosed the method of controlling at least one of the transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

Regarding claim 41, An disclosed the method of the processor circuit is configured to produce the bandwidth anomaly signal when the correlation value is less than a reference value (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). The unit 126 outputs the estimated data transmission rate to the outside, when the detected error is smaller than the reference error level.

Regarding claim 42, An disclosed the method of the processor circuit is configured to determine whether the correlation value is less than the reference value (An see paragraph 0025, lines 1-8, and paragraph 0026, lines 1-15). As shown, the unit 125 compares the value outputted from 124 with a reference error level. If the data from unit 124 is smaller than the reference error level, then the unit 125 will output the comparison result signal to unit 126.

Regarding claim 43, An disclosed the method of the processor circuit is configured to receive a second traffic waveform representing a statistical measure of a time distribution of data volume in a second direction on the data communication system in a second period of time, and use the second traffic waveform as the reference waveform to produce the correlation value (An see fig. 1, unit 120, and see

paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in the reference, the unit 121 detects a data rate of the transmitted bit stream data by counting up or down whenever bit stream data in a word unit is transmitted from unit 104 to unit 102, which in reserve direction (second direction). The unit 125 compares the error transmitted by unit 124 with a reference error level.

Regarding claim 44, An disclosed the method of a first traffic waveform generator operable to receive a first set of traffic measurement values and to produce the first traffic waveform in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data unit.

Regarding claim 49, An disclosed the method of the processor circuit is configured to implement the first traffic waveform generator (An see fig. 1, unit 120, and see paragraph 0023, lines 1-8, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values, and output a result signal. Therefore, we can interpret that the result signal (first waveform) is generated based on sample and filtered values.

Regarding claim 50, An disclosed the method of the first traffic waveform represents a statistical measure of a time distribution of data volume in the first direction

(An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume.

Regarding claim 51, An disclosed the method of a communication interface operable to monitor data in the first direction and to produce the first set of traffic measurement values in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data interface.

Regarding claim 54, An disclosed the method of the communication interface includes at least one of a packet counter and an octet counter operable to count a corresponding one of packets and octets of data in the first direction (An see paragraph 0021, lines 1-10). The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 55, An disclosed the method of the processor circuit is configured to communicate with the communication interface to receive values produced by at least one of a the packet counter and the octet counter, the values representing the first set of traffic measurement values (An see paragraph 0021, lines 1-

10). The detecting unit 121has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 56, An disclosed the method of the processor circuit is configured to implement the communication interface (An see paragraph 0021, lines 1-10, and fig. 1 box 120). The unit 122 is the communication interface to receive values produce by the counter 121.

Regarding claim 57, An disclosed the method of a passive monitor operable to passively monitor the data in the first direction and to provide a copy of the data in the first direction to the communication interface (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sampler is the monitoring data interface.

Regarding claim 58, An disclosed the method of a signaling device for signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding claim 59, An disclosed the method of a communication control device for controlling at least one of the transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the

unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

Regarding claim 60, An disclosed the method of a traffic waveform generator operable to receive the first and second sets of traffic measurement values and to produce the first and second traffic waveforms in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in the reference, the unit 121 detects a data rate of the transmitted bit stream data by counting up or down whenever bit stream data in a word unit is transmitted from unit 102 to unit 104 (first direction). The sampler 122 samples a value detected by unit 121 at 125Hz. The LPF 123 filters the value sampled by the sampler 122. As shown in fig. 2A and fig. 2B illustrating the result of input and output of the simulation of a LPF. Fig. 2A-2B, illustrates the result of the sampled value in waveform, where the waveform is filtered with LPF. The X-axis of fig. 2A-2B can represent the frequency or time, where the Y-axis can represent the data volume or gain. The unit 124 detects an error based on the sampler value and filtered value. The unit 125 compares the error transmitted by unit 124 with a reference error level. The unit 104 also can transmit stream data to unit 102 (second direction) to produce second waveform with same procedure mentioned above.

Regarding claim 61, An disclosed the method of the processor is configured to receive first and second traffic waveforms representing first and second statistical measures of first and second time distributions respectively of data volume in first and

second directions in the data communications system (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, paragraph 0023, lines 1-9, paragraph 0024, lines 1-20, paragraph 0025, lines 1-8, and figs. 2A-2B). As shown in fig. 2A and fig. 2B illustrating the result of input and output of the simulation of a LPF. Fig. 2A-2B, illustrates the result of the sampled value in waveform, where the waveform is filtered with LPF. The X-axis of fig. 2A-2B can represent the frequency or time, where the Y-axis can represent the data volume or gain.

Regarding claim 67, An disclosed the method of a communication interface operable to monitor data in the first and second directions and to produce the first and second sets of traffic measurement values respectively in response thereto (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As discussed before, the detecting unit 121 detects data rate by counting or monitoring up or down whenever bit stream data is transmitted from unit 102 to unit 104, or unit 104 to unit 102 in reverse direction (second direction).

Regarding claim 70, An disclosed the method of the communication interface includes at least one of a packet counter and an octet counter operable to count a corresponding one of packets and octets of data for each of the first and second directions (An see paragraph 0021, lines 1-10). The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 71, An disclosed the method of the processor circuit is configured to communicate with the communication interface to receive values produced by at least one of the packet counter and the octet counter, the values

representing the first and second sets of traffic measurement values (An see paragraph 0021, lines 1-10). The detecting unit 121 has mean to counting up or down for transmitting stream data, therefore considered as counter.

Regarding claim 72, An disclosed the method of the processor circuit is configured to implement the communication interface (An see paragraph 0021, lines 1-10, and fig. 1 box 120). The unit 122 is the communication interface to receive values produce by the counter 121.

Regarding claim 73, An disclosed the method of a passive monitor operable to passively monitor the data in the first and second directions and to provide copies of the data to the communication interface (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As discussed before, the detecting unit 121 detects data rate by counting or monitoring up or down whenever bit stream data is transmitted from unit 102 to unit 104, or unit 104 to unit 102 in reverse direction (second direction).

Regarding claim 74, An disclosed the method of a signaling device for signaling an operator in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0027, lines 1-15). As shown, the 125 output a resulting signal to 126. The 126 is the operator.

Regarding claim 75, An disclosed the method of a communication control device for controlling at least one of the transmission and reception of data from the data communication system in response to the bandwidth anomaly signal (An see paragraph 0025, lines 1-8, paragraph 0026, lines 1-15, and see paragraph 0029, lines 1-10). As

shown, the 125 output a resulting signal to 126. The 126 is the operator. As shown, the unit 127 controls the transmission of data in response to the signal from 126 by performing comparing.

5. Claims 6-10, 23-27, 45-48, 62-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over An (Pub No.: 2001/0040919), in view of Cranford Jr. et al. (Pub No.: 2004/0066864), as applied to claim 1 above, and further in view of Sahinoglu et al. (Pub No.: 2003/0021295).

For claim 6, An and Cranford Jr. et al. disclosed all the subject matter of the claimed invention with the exception of generating the first traffic waveform comprises subjecting the first set of traffic measurement values to a Discrete Wavelet Transform. Sahinoglu et al. from the same or similar fields of endeavor teaches the method of generating the first traffic waveform comprises subjecting the first set of traffic measurement values to a Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Sahinoglu et al. in the network of An, and Cranford Jr. et al. The motivation for using the method as taught by Sahinoglu et al. in the network of An, and Cranford Jr. et al. being that it can increase the system estimation accuracy.

Regarding claim 7, Sahinoglu et al. also disclosed the method of subjecting the first set of traffic measurement values to the Discrete Wavelet Transform comprises

using Haar wavelet filter coefficients in the Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6).

Regarding claim 8, Sahinoglu et al. also disclosed the method of generating the first traffic waveform comprises causing the Discrete Wavelet Transform to produce a first component, the first component representing the first traffic waveform (Sahinoglu et al. see paragraph 0016, lines 1-6). The DWT is applied to determine the frequency bands (waveform) of each vector.

Regarding claim 9, An disclosed the method of producing the correlation value comprises correlating the first component with the reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sample value is the first component.

Regarding claim 10, An disclosed the method of using a processor circuit to generate the first traffic waveform and to correlate the first traffic waveform with the reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation

value is obtained when the unit 124 takes the difference between the sample and filter values;

Regarding claims 23, 45, 62 Sahinoglu et al. also disclosed the method of subjecting the first and second sets of traffic measurement values respectively, to a Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6).

Regarding claims 24, 46, 63 Sahinoglu et al. also disclosed the method of using Haar wavelet filter coefficients in the Discrete Wavelet Transform (Sahinoglu et al. see paragraph 0035, lines 1-6).

Regarding claims 25, 47, 64 Sahinoglu et al. also disclosed the method of causing the Discrete Wavelet Transform to produce a first component, representing the first traffic waveform and a second component representing the second traffic waveform (Sahinoglu et al. see paragraph 0016, lines 1-6). The DWT is applied to determine the frequency bands (waveform) of each vector.

Regarding claims 26, 65 An also disclosed the method of producing the correlation value comprises correlating the first and second components (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the sample value is the first component, and the filtered valued is the second component.

Regarding claim 27, An also disclosed the method of implementing a traffic waveform generator in a processor circuit used to produce the correlation value (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123. Then, unit 124 takes the difference between both values. Therefore, we can interpret that the bit stream data is the first traffic waveform representing a time distribution of data volume. The correlation value is obtained when the unit 124 takes the difference between the sample and filter values.

Regarding claim 48, An also disclosed the method of the processor circuit is configured to produce the correlation value by correlating the first component with the reference waveform (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20, and fig. 1, unit 120). As shown in unit 120, a unit 126 receives the filter value from 123, and a first comparison value from 125. Therefore, we can interpret that the sample value is the first component.

Regarding claim 66, An also disclosed the method of the processor circuit is configured to implement the traffic waveform generator (An see fig. 1, unit 120, and see paragraph 0020, lines 1-10, paragraph 0021, lines 1-10, and paragraph 0024, lines 1-20). As shown in the reference, a bit stream data is received at 121, and through 122, and 123. The unit 124 received a sample value from 122, and a filter value from 123.

Then, unit 124 takes the difference between both values. Therefore, we can interpret that the sample value is the generator.

6. Claims 13, 14, 29, 30, 52, 53, 68, 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over An (Pub No.: 2001/0040919), in view of Cranford Jr. et al. (Pub No.: 2004/0066864), as applied to claim 1 above, and further in view of Chen et al. (Pub No.: 2004/0017779).

For claim 13, An and Cranford Jr. et al. disclosed all the subject matter of the claimed invention with the exception of producing values representing a property of an Ethernet statistics group in a remote monitoring protocol. Chen et al. from the same or similar fields of endeavor teaches the method of producing the first set of traffic measurement values comprises producing values representing a property of an Ethernet statistics group in a remote monitoring protocol (Chen et al. see paragraph 0002, lines 1-7). The Ethernet switch monitors remote equipment and to drive a warning message email message to remote equipment. The Ethernet switch can be the Ethernet statistics group, and the email is the remote monitoring protocol. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Chen et al. in the network of An, and Cranford Jr. et al. The motivation for using the method as taught by Chen et al. in the network of An, and Cranford Jr. et al. being that it can increase the system portability.

Regarding claim 14, Chen et al. disclosed the method of causing a processor circuit operable to produce the first traffic waveform to communicate with a communication interface to receive the values representing the property of an Ethernet statistics group (Chen et al. see paragraph 0002, lines 1-7).

Regarding claim 29, Chen et al. disclosed the method of producing the first and second sets of traffic measurement values comprises producing values representing a property of an Ethernet statistics group in a remote monitoring protocol, for each of the first and second directions (Chen et al. see paragraph 0002, lines 1-7). The Ethernet switch monitors remote equipment and to drive a warning message email message to remote equipment. The Ethernet switch can be the Ethernet statistics group, and the email is the remote monitoring protocol.

Regarding claim 30, Chen et al. disclosed the method of causing a processor circuit operable to produce the first and second traffic waveforms to communicate with a communication interface to receive the values representing a property of an Ethernet statistics group (Chen et al. see paragraph 0002, lines 1-7). The Ethernet switch monitors remote equipment and to drive a warning message email message to remote equipment. The Ethernet switch can be the Ethernet statistics group, and the email is the remote monitoring protocol.

Regarding claim 52, Chen et al. disclosed the method of the communication interface produces values representing a property of an Ethernet statistics group in a remote monitoring protocol (Chen et al. see paragraph 0002, lines 1-7). The Ethernet switch monitors remote equipment and to drive a warning message email message to

remote equipment. The Ethernet switch can be the Ethernet statistics group, and the email is the remote monitoring protocol.

Regarding claim 53, Chen et al. disclosed the method of the processor circuit is configured to communicate with the communication interface to receive the values representing a property of an Ethernet statistics group, the values representing the first set of traffic measurement values (Chen et al. see paragraph 0002, lines 1-7). The Ethernet switch monitors remote equipment and to drive a warning message email message to remote equipment. The Ethernet switch can be the Ethernet statistics group, and the email is the remote monitoring protocol.

Regarding claim 68, Chen et al. disclosed the method of the communication interface produces values representing a property of an Ethernet statistics group in a remote monitoring protocol, for each of the first and second directions (Chen et al. see paragraph 0002, lines 1-7). The Ethernet switch monitors remote equipment and to drive a warning message email message to remote equipment. The Ethernet switch can be the Ethernet statistics group, and the email is the remote monitoring protocol.

Regarding claim 69, Chen et al. disclosed the method of the processor circuit is configured to communicate with the communication interface to receive the values representing a property of an Ethernet statistics group, for each of the first and second directions, the values representing the first and second sets of traffic measurement values respectively (Chen et al. see paragraph 0002, lines 1-7). The Ethernet switch monitors remote equipment and to drive a warning message email message to remote

equipment. The Ethernet switch can be the Ethernet statistics group, and the email is the remote monitoring protocol.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-1413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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